IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Hiroshi YAMADA

Group Art Unit: 1713

Application No.: 09/695,317

Examiner: HARLAN, Robert D

Filed: October 25, 2000

Title: RUBBER COMPOSITION AND TIRE

DECLARATION PURSUANT TO 37 C.F.R. §1.132

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

I, Atsushi Nakayama, a citizen of Japan, hereby declare and state that:

1. I graduated from Tokyo University of Agriculture Technology with a Master's Degree in Chemistry in March 1991;

2. I joined Bridgestone Corporation in April 1991, and since then I have been engaged in research and development in the field of rubber materials and their raw materials; and

3. Regarding the above-referenced patent application, I am familiar with the Final Office Action dated July 24, 2003 and the Advisory Action dated November 6, 2003, and understand the Examiner's rejections therein.

The following experiment and assessment were carried out by me or under my supervision in order to make the advantages of the invention more clear.

EXPERIMENT

Experiment:

The following experiment was made to reveal that the claimed features of carbon black of the present invention are not inherent in the carbon black disclosed in *Hojo* (U.S. Patent No. 6,380,288).

Carbon blacks of HAF, ISAF and SAF grades were prepared and assessed for the characteristics of (1) DBP; (2) Dw/Dn; (3) Tint; and (4) N_2SA, and then evaluated for an equation of Tint $\geqq$ 0.100 x (N_2SA) + 93.

(1) DBP (dibutyl phthalate absorption amount) was measured, in accordance with rule A of Japanese Industrial Standard (JIS) K6221 (1982) 6.1.2, by determining the amount of dibutyl phthalate (ml) that was absorbed by 100 g of carbon black.

(2) The ratio of Dw/Dn was calculated by measuring the weight average diameter (Dw) and the number average diameter (Dn) using a disc centrifuge photosedimentmeter (DCP) (BI-DCP, manufactured by DCP Brookhaven Co., Ltd.).

(3) Tint (specific tinting strength) was measured by a meathod which confirms rule A of JIS 6221-1982.

(4) N_2SA (nitrogen absorption specific surface area) per unit weight (m^2/g) was measured as stipulated in ASTM D3037-88.

RESULTS

The obtained results are summarized in the following Table.

TABLE

	HAF grade		ISAF grade			SAF grade					Present Invention
	N330	N339	N220	N234	N299	N110	N115	N121	N134	N135	
DBP	102	120	114	125	124	113	113	132	127	135	140-200
Dw/Dn				1.30, 1.52	1.955	1.44	1.717	1.755			1.80-2.40
Tint	103	110	115	124	113	124	123	121	132	119	
N_2SA	79	92	115	120	103	130	143	124	145	141	100-180
※Formula#1	100.9	102.2	104.5	105	103.3	106	107.3	105.4	107.5	107.1	
Judge	*Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Notes:

(1) ※ Formula#1: $0.100 \times N_2SA + 93$

(2) * Yes: satisfy an equation of Tint $\geqq 0.100 \times N_2SA + 93$

CONCLUSION

As seen from the results summarized in the above-shown Table, carbon blacks of HAF grade to SAF grade only satisfy the equation of Tint $\geqq 0.100 \times N_2SA + 93$. These carbon blacks do not satisfy the characteristics of (1) DBP nor (2) Dw/Dn, except that the obtained value of Dw/Dn for "N299" (in ISAF grade) is 1.955, which falls within the claimed range of the present invention (1.8 - 2.40).

The foregoing results reveal that the features of the carbon black as claimed in the present invention are not inherent in the carbon black disclosed in *Hojo* (U.S. Patent No. 6,380,288).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 12/Mar./2004

Atsushi Nakayama